Memo

Quality Control

	er ID 121429 \ 26, 2014 2:59:28 PM	, , ,	*191	429*						Page 1
Item ID: Revision ID:	D3407-041	PLIT	Accept	*N900	040	100	<b>)*</b> s	etup Start	*N	S1*
Item Name:	Tow Ring	•						Stop	*N	S2*
Start Date: Required Date:	7/15/14 Start Qty: 10 7/15/14 Req'd Qty: 10	·/ · /		Cust Item l Customer:	D:					,
Reference:							n	tun Start		
Approvals:	Process Plan: MUS	Date: 14-00-7	7 Tooling:	D:	ate:		N		~171	R1*
,	QC:	Date:	_ SPC (Y/N):	D:	ate:		*	Stop	*N	R2*
Sequence ID/ Work Center II	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty		Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr					<del></del>				
D3407	Rev E									
100			0.00							
*100*	Large Fab						(1)	_&	14.	7-2/
Large Fab	Memo		0.00							
Large Fab	Weld I	D3407-1/-5 using welding rod TTG174 ROD Batch:	TIG174 as per Dwg D3407 1/02576	& QSI 004						
110	QC9- Inspect visua	al per QSI004- Fusion Welds	0.00							DAS
*110*							(10)	14-07-	22	9-89
QC Quality Control	Memo	•	0.00					· · · · · · · · · · · · · · · · · · ·		
Quanty Connor										
120	QC5- Inspect part	completeness to step on W/O	0.00							
*120*	•						(a)	14-07.	77	DA
QC	Memo	)	0.00	•					<del></del>	

DQA:	Date:												TAART
						WORK ORDER NON-	-C(	ONFO	RMANCE / UPDA				AEROSPACE
QA Closed:			Date:							Wo	ork Order up	date only	
Work Ord	or.					DISPOSITION			A	GAINST DE	PARTMENT	PROCESS	•
WOIK OIG	CI.,					Rework	1		Skid-tube Cro	osstube	]	Water Jet	Engineering
Part I	Vo.					Scrap			i	mall Fab	Pro	d. Eng. Coor.	Quality
	•					Use-as-is	1		· —	inishing		e/Packaging	Other
NCR I	۷o.				<del></del>	Suspected Unapproved	]		Large Fab Cor	mposite		Supplier	
Root	. 1				Desc	ription of work order update		Initial	Action	-	Sign &		· · · · · · · · · · · · · · · · · · ·
Cause		Date	Step	Qty	Desci	or non-conformance	1	nief Eng		n	Date	Verification	QC Inspector
Design		Date	эсер	αι,		or non comormance	<del>  ``</del>	iici Eiig					
Doc/Data	Н												
Equip/Tooling													
Handling/Pre													
Material													
Operator												-	·
Offset/Setup													
Process													
Supplier		'											
Training		Ì											·
Transport									į.				
Unapproved						·	<u> </u>						
							FA	ULT CA	TEGORY				
Landi	ng (	1			_	General	_	7	<u>.</u>	_	1		7
	$ldsymbol{f eta}$	Bending			<u> </u>	Bend	$\vdash$	-	Program	-	Outside Dim	<u> </u>	Pressure/Forced
	<u> </u>	Centre No	ot Concer	ntric		BOM/Route	<u> </u>	Grain		$\vdash$	Over/Under	<b>├</b>	Set-up
	<u> </u>	Cracks				Broken/Damage/Defect	<u> </u>	Hardwa		, <u> </u>	Part Incorred	<u> </u>	Temperature/Cure
	<u> </u>	Crimp/Kii	nk/Ripple	/Wave	$\vdash$	Burrs	-	<b>⊣</b> `.	tion Incomplete/Unquality	<u> </u>	Part Lost/Mi	ssing	Weld
v		Cuffs			-	Contamination	$\vdash$	-	tions Incomplete/Unclea	ar	Part Moved	· L_	Wrong Stock Pulled
	-	Crushing			$\vdash$	Countersink	-	Mislabe	gned/off center		Positioned V Power Loss/	_	Other
-4.	-	Heat Trea		Tuka	$\vdash$	Cut Too Short	-	Misrea			Trower ross/	Juige	Other
	$\vdash$	Marks/Ch	•	rube	$\vdash$	Drawing Drill Holes	$\vdash$	Off-set				<u> </u>	
	$\vdash$	4			-	Finish	$\vdash$	4	Calibration				
	Turning Sequence Wave/Twist in Tube			Fit/Function		-	Sequence						
I	Wave/Twist in Tube			1		1	· · · • · · · · · · · · · · · · · · · ·						

\*121429\*

Page 2

Thursday, June	26, 2014 2:5	9:28 PM			14/9							- "5	,0 2
Item: ID: Revision ID:	D3407-041			Accept	*N900	040	100	ገ*		tart	*N:	S1*	
Item Name:	Tow Ring								S	Stop	*N:	S2*	•
Start Date:	7/15/14	Start Qty: 10.00	*10*		Cust Item 1	ID:							
Required Date:	7/15/14	<b>Req'd Qty:</b> 10.00	*10*		<b>Customer:</b>								
Reference:													
Approvals:	Process Pla	nn:	Date:	Tooling:	D	ate:		J		tart	*N	R1*	•
; F 1	QC:		Date:	<b>SPC (Y/N):</b>	D	ate:			2	Stop	*N	R2*	•
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Rejec Qty		Reject Number	Insp. Stamp	
130 *130* Powdercoat		White Gloss(Ref:4.3.5.2)	per QSI005 4.3-Steel	0.00				10	6	14	7-20	2	948 34
Powder Coating		START TIM OVEN TEM	eaded Section** E: 0.05 PERATURE: //00 E: 0.05	0.00									
140		QC3- Inspect Part Finish		0.00								DA 4' 9-8	1
*140* QC Quality Control		Мето		0.00				10	ø	<del></del> .	Ø	14-7-	_
150		Identify as per dwg & Sto	ock Location:	0.00				f	//		6	)	
*150* Packaging		Memo	5/535	0.00				14/	7/23	3		<b>/</b>	<del></del>
Packaging													

DQA:	A: Date:														
			<b>5</b> .			WORK ORDER NON	-CC	ONFO	RMANCE / UF		Vork Order up	data anly	AEROSPACE		
QA Closed:		<del></del>	Date:							V	vork Order up	date only			
Work Orde	or.					DISPOSITION									
Work Orac	-	#111		····		Rework	1		Skid-tube	Crosstube	7	Water Jet	Engineering		
Part N	lo.					Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality		
	-					Use-as-is	1		noforming	Finishing		e/Packaging	Other		
NCR N	۱o.					Suspected Unapproved			Large Fab	Composite		Supplier			
	_					<u> </u>									
Root					Desc	ription of work order update	1	nitial	Acti	on	Sign &				
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descri	ption	Date	Verification	QC Inspector		
Design	Ш														
Doc/Data												-			
Equip/Tooling															
Handling/Pre															
Material							İ								
Operator	$\Box$														
Offset/Setup	$\Box$														
Process	Ш		<u> </u>												
Supplier	Ш														
Training BAJ	Щ														
Transport	Ш						Ì						•		
Unapproved							<u> </u>								
							FA	ULT CA	TEGORY				1		
Landi	_					General		];_/c	)	Г	Outside Dim	onsions F	Pressure/Forced		
	Н	Bending	- t C		-	Bend BOM/Route	-	Grain	Program	<del> -</del>	Over/Under	<u> </u>	Set-up		
	Н	Centre No	ot Concen	itric	$\vdash$	Broken/Damage/Defect	$\vdash$	Hardwa	aro.		Part Incorred		Temperature/Cure		
	$oldsymbol{arphi}$	Cracks	alı/Dinmla	Mayo	-	· · · · · · · · · · · · · · · · · · ·	$\vdash$	4	ire ion Incomplete/Un	qualified	Part Lost/Mi		Weld		
		Crimp/Kir Cuffs	ik/kippie,	, wave		Burrs	$\vdash$	1	tions Incomplete/U		Part Moved	-	Wrong Stock Pulled		
	$\vdash$				-	Contamination Countersink	_	4	gned/off center	, inclear	Positioned V	L Vrong			
	$\vdash$	Crushing Heat Trea	<b>^</b>		-	Cut Too Short	-	Mislabe		<u> </u>	Power Loss/	_	Other		
		Inspectio		Tuhe	-	Drawing	$\vdash$	Misrea		L.					
	-	Marks/Ch	•	TUDE	-	Drill Holes	$\vdash$	Off-set							
	-				-	Finish		4	Calibration		<del>- ,</del>	······································			
Turning Sequence Wave/Twist in Tube				Fit/Function		4	Sequence								

Work Order ID 121429 Thursday, June 26, 2014 2:59:28 PM

\*121429\*

Page 3

Item ID:

D3407-041

Accept

\*N900040100\*

Setup Start

**Revision ID:** 

Start Date:

Item Name: Tow Ring

Required Date: 7/15/14

7/15/14

**Start Otv:** 10.00 Rea'd Otv: 10.00

\*10\* \*10\*

Date:

**Cust Item ID:** 

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Start

Run

Stop

Stop

\*NP2\*

Sequence ID/ **Work Center ID**  Operation

OC:

Description

Memo

Set Up/ **Run Hours**  Tool ID

Tool # Plan Code

Accept Oty

Reject Reject Oty

Insp.

Number Stamp

\*160\*

160

OC

QC21- Final Inspection - Work Order Release

0.00

0.00

Quality Control

My-7-23

DQA:			Date:						_				AC"	RT
0461			Data			WORK ORDER NON	-CC	ONFO	RMANCE / UP		ork Order up	ndate only	AERO	SPACE
QA Closed:		_	Date:								<u>.</u>			
Work Ord	or.					DISPOSITION				AGAINST DE	PARTMENT	PROCESS		
WOIN OIG	-		·			Rework	1		Skid-tube	Crosstube		Water Jet	Engineeri	ng
Part I	No.					Scrap		į	Machining	Small Fab	Pro	d. Eng. Coor.	Qual	ity
	-					Use-as-is		Thern	noforming	Finishing	Rec/Stor	e/Packaging	Oth	ner
NCR I	۷o					Suspected Unapproved	]		Large Fab	Composite		Supplier		
			, ,				<b></b>		· · · · · · · · · · · · · · · · · · ·		1 2 2		<u> </u>	
Root					Desc	ription of work order update	ı	Initial	Acti		Sign &	.,	000	
Cause		Date	Step	Qty		or non-conformance	Ch	nief Eng	Descri	ption	Date	Verification	QC Insp	ector
Design														
Doc/Data	Ш			,										
Equip/Tooling														
Handling/Pre	$\vdash$													
Material	Н													
Operator	Н													
Offset/Setup	$\vdash\vdash$											:		
Process Supplier	H						ļ							
Training	H	-	ļ											
Transport	Н													
Unapproved	H				ľ							_		
			<u> </u>	1			FA	ULT CA	TEGORY					
Landi	ng G	iear				General		_				_	_	
		Bending				Bend		Folio/F	Program		Outside Dim	ensions	Pressure/Fo	rced
		Centre N	ot Concer	ntric		BOM/Route		Grain		<u> </u>	Over/Under	tolerance	Set-up	Ÿ
		Cracks				Broken/Damage/Defect	L	Hardwa	are		Part Incorre	-	Temperatur	e/Cure
		Crimp/Kii	nk/Ripple	/Wave		Burrs		Inspect	ion Incomplete/Un	qualified	Part Lost/Mi	issing	Weld	
	Ш	Cuffs				Contamination		-	tions Incomplete/U	nclear	Part Moved		Wrong Stock	k Pulled
	Ш	Crushing			L	Countersink	L	<b>⊣</b> '	gned/off center		Positioned V		٦	
		Heat Trea				Cut Too Short		Mislabe			Power Loss/	Surge	Other	
	-	Inspectio	-	Tube	_	Drawing	$\vdash$	Misrea				· · · · · · · · · · · · · · · · · · ·		
		Marks/Cl				Drill Holes	L	Off-set						
	Щ	Turning S	•		<u> </u>	Finish	L	<b>⊣</b>	Calibration					
	Wave/Twist in Tube			Fit/Function		Out of	Sequence							

Page 1

Work Order ID: 121429

\*121429\*

Parent Item:

D3407-041

Parent Item Name: Tow Ring

\*D3407-041\*

**Start Date:** 7/15/14

Required Date: 7/15/14

**Start Qty: 10.00** 

Required Qty: 10.00

Comments:

IPP Rev:A05.10.14New issueKJ/EC

IPP Rev:B 08-09-09 revE as per dwg DD verified by:EC

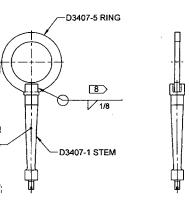
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3407-1		Manufactured	No			100	Each	57.0000	1	10			
*D3407-1*									**	R		4-7-6	/_
				<b>Location</b>		Loc	<u>Oty</u>	Loc Code					
				WA001			57		_				
				(	103869		6		_	6			
					113621		10						
D2407 E				•	116814		41		_	<u> </u>			
D3407-5		Manufactured	No			100	Each	31.0000	1	10			
*D3407-5*									**	A		4.7-8	9/
				<b>Location</b>		Loc	Qty	Loc Code					
				WA001			31						

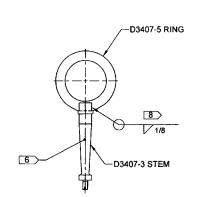
113761 20 115097 3 115804

119560 x 10

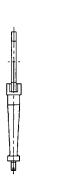
DQA:	Date:					WORK ORDER NON	*DART						
QA Closed:			Date:			WORK ORDER NON-	-((	JINFOI	RIVIAINCE / OF		ork Order up	date only	AEROSPACE
Work Orde	25.					DISPOSITION				AGAINST DE	PARTMENT	PROCESS	
WOIK OIG	٠					Rework	ıl		Skid-tube	Crosstube	1	Water Jet	Engineering
Part N	۱o. <sub>-</sub>		· · · · · · · · · · · · · · · · · · ·			Scrap Use-as-is			Machining	Small Fab Finishing		d. Eng. Coor. re/Packaging	Quality Other
NCR N	No.					Suspected Unapproved		mem	Large Fab	Composite	, Kecyston	Supplier	
Root				l	Desc	ription of work order update		nitial	Acti	ion	Sign &		
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descri	iption	Date	Verification	QC Inspector
Design													
Doc/Data				·									
Equip/Tooling							]						
Handling/Pre													
Material					<u> </u>								
Operator										·			
Offset/Setup													
Process													
Supplier													
Training			1										
Transport							l						
Unapproved											<u> </u>		
							FA	ULT CA	regory				
Landi	ng G	iear				General		_		_	_	_	
		Bending				Bend	L	Folio/F	Program	<u> </u>	Outside Dim	ensions	Pressure/Forced
		Centre N	ot Concei	ntric		BOM/Route		Grain		_	Over/Under	tolerance	Set-up
		Cracks				Broken/Damage/Defect	L	Hardwa	ire		Part Incorre	cí _	Temperature/Cure
		Crimp/Ki	nk/Ripple	/Wave		Burrs	L	Inspect	ion Incomplete/Un	qualified	Part Lost/M	ssing	Weld
		Cuffs				Contamination		Instruct	tions Incomplete/U	Inclear	Part Moved		Wrong Stock Pulled
		Crushing				Countersink		Misalig	gned/off center		Positioned V	Vrong	<del>_</del>
		Heat Trea	at			Cut Too Short		Mislabe	eled		Power Loss/	Surge	Other
		Inspectio	n Strip in	Tube		Drawing		Misrea	d				
		Marks/Cl	natter			Drill Holes		Off-set					
		Turning S	equence			Finish		Out of	Calibration				
	Wave/Twist in Tube				Fit/Function		Out of Sequence						

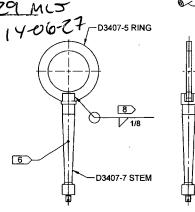
Æ QTY -045 PART NUMBER DESCRIPTION TOW RING D3407-041 D3407-043 **TOW RING** D3407-045 TOW RING STEM D3407-1 D3407-3 STEM D3407-5 RING D3407-7 STEM

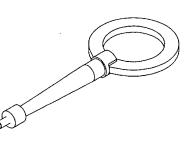




SHOP COPY **RETURN TO ENGINEERING** UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE WORK ORDER NO. 1214291 MCT









**D3407-041 TOW RING** 

**D3407-043 TOW RING** 

**D3407-045 TOW RING** 

DRAW		Per	PORT HADLOCK PRAWING NO.		REV						
DESIG	DESIGN 1977		DART AEROSPACE	USA	, INC.						
REV.			DESCRIPTION	BY	DATE						
Α	NEW IS	SUE		CP	05.03.16						
В	UPDATE	DIAMETER, T	THREAD CLASS ADDED	CP	05.06.17						
С	-1/-3 LO	CP	05.09.09								
D	WITH D	D3407-1/3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/-3 (ZN B6-4); REASON: PRODUCTION FACILITY									
E	ADD D3- REVISEI REASON	ADD D3407-945 (2N 82-1, D8-1); ADD D3407-7 (2N 86-5); REVISED NOTE 6 TO ADD IDENTIFICATION (2N 85-1); REASON: PRODUCTION FACILITY  08.07.23									

DESIGN	147	DART AEROSPACE USA, INC.							
DRAWN	Pet	PORT HADLO	OCK, WA						
CHECKED	15 /	DRAWING NO.	REV. E						
MFG. APPR.	£/d/	D3407	SHEET 1 OF 5						
APPROVED	/W/ ·	TITLE	SCALE						
DE APPR.	-#	TOW RING	NTS						
DATE 08.0	7.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.  THIS DOCUMENT IS PRIVATE AND COMPENSITUL AND IS SUPPLIED ON THE EXPRESS COMPTION THAT IT IS  NOT TO BE USED FOR ANY PURPOSE OR COMPLICATE TO TO ANY OTHER PERSONNEHOUT.							

D

С

NOTES:
1) MATERIAL: N/A
2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED

4) UNITS. INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER
7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

8

